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## PCW\_\_09\_\_22 Coordinate transformations v9

### Question 1

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = \frac{f[5(x-9)]}{4} - 2$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a}{5} + 9, \frac{b}{4} - 2 \right)$$

### Question 2

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 2 \cdot \left( f \left[ \frac{x+8}{7} \right] - 6 \right)$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow (7a - 8, 2(b - 6))$$

### Question 3

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = \frac{f\left[\frac{x}{7} + 8\right]}{3} + 5$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( 7(a - 8), \frac{b}{3} + 5 \right)$$

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### Question 4

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 3 \cdot f\left[\frac{x}{7} - 4\right] - 9$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow (7(a + 4), 3b - 9)$$

### Question 5

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 9 \cdot (f[7x - 6] + 2)$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a + 6}{7}, 9(b + 2)\right)$$

### Question 6

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 7 \cdot f\left[\frac{x - 4}{2}\right] + 8$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow (2a + 4, 7b + 8)$$